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REMARKS

The application has been reviewed in light of the Office Action dated March 24, 2008. Claims 1-20 are pending. By this Amendment, claims 1 and 19 have been amended to clarify the claimed subject matter, and new claim 21 has been added. Accordingly, claims 1-21 are now pending, with claims 1, 6, 15, 19 and 20 being in independent form.

Claim 1 was rejected under 35 U.S.C. §112, second paragraph, as allegedly indefinite.

In response, claim 1 has been amended to clarify the claimed subject matter.

Withdrawal of the rejection under 35 U.S.C. §112 is respectfully requested.

Claims 1, 3, 5, 6, 10, 11, 15, 19 and 20 were rejected under 35 U.S.C. § 102(e) as purportedly anticipated by U.S. Patent No. 6,917,639 to Ishida et al. Claims 4 and 9 were rejected under 35 U.S.C. § 103(a) as purportedly unpatentable over Ishida et al.

The Office Action also indicates that claims 2, 7, 8, 11-14 and 16-18 are objected to as being dependent upon a rejected base claim but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

However, since independent claims 1, 6, 15, 19 and 20 are submitted to be patentable over the cited art, for at least the following reasons, no changes to the form of claims 2, 7, 8, 11-14 and 16-18 are believed to be necessary.

This application relates to improvements devised by applicant for driving control of a semiconductor laser to control current supplied to the laser so that a desired amount of emission light is obtained, including generating a first current that is below an oscillation threshold current of the laser, generating a second current that is needed for light emission of the laser responsive to an input signal, *generating a third current that controls the laser such that a detected amount of emission light from the laser accords with a given value*, performing an initialization



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Threshold current source 11 in Fig. 24 of Ishida is equated in the Office Action with a first current generating unit for generating a first current that is below an oscillation threshold current of the laser. Modulation current source 13 in Fig. 24 of Ishida is equated in the Office Action with a second current generating unit for generating a second current that is needed for light emission of the laser responsive to an input signal. Auxiliary modulation current source 14 in Fig. 24 of Ishida is equated in the Office Action with a third current generating unit for generating a third current that controls the laser such that a detected amount of emission light from the laser accords with a given value.

However, auxiliary modulation current source 14, as proposed in Ishida (column 16, lines 19-48, reproduced below), clearly does not, and does not have the function to, generate a third current that *controls the laser such that a detected amount of emission light from the laser accords with a given value, wherein such third current is controlled so that an amount of light outputted by the laser which receives a sum of the first current, the second current, the third current and the auxiliary current, accords with a predetermined amount.*

... there is provided an auxiliary modulation current source 14 parallel with other current sources 11-13, and thus, the laser diode LD is driven with a sum of the drive currents produced by the current sources 11-14. Thereby, it should be noted that *the auxiliary modulation current source 14 is tuned on for only a very short interval such as 0.5-5 nm at the beginning of operation of the modulation current source 13.* Similarly as before, the bias current source 12 supplies a drive current of about 1 mA, not exceeding several milliamperes throughout, while the threshold current source 11 supplies a threshold current of the laser diode. The current of the threshold current source 11 may be slightly smaller than the threshold current of laser oscillation in view of the fact that the threshold current 11 is superimposed to the bias current from the bias current source 12, similarly to the previous embodiment.

Thus, similarly to the previous embodiment, the laser drive circuit of the present embodiment improves the response of laser driving by causing to flow a minute bias current continuously to the laser diode such that the impedance of the laser diode is reduced. Here, the explanation made previously with reference to FIGS. 4 and 5 applies.

Further, according to the present embodiment, *it becomes possible to change the carrier density in the active layer linearly with the modulation current, starting*

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*from a very low carrier concentration level, whatever the characteristics of the laser diode may be, by superimposing a current pulse to the modulation current at the beginning of the modulation current, with a magnitude proportional with the modulation current for a very short interval.*

Thus, in the laser driver circuit proposed by Ishida, current source 14 generates a current pulse for only a very short interval at the beginning of operation of modulation current source 13, and such current pulse has the function of changing the carrier density in the active layer linearly with the modulation current, starting from a very low carrier concentration level.

Contrary to the contention in the Office Action, Ishida does not disclose or suggest generating a third current that controls the laser such that a detected amount of emission light from the laser accords with a given value, wherein such third current is controlled so that an amount of light outputted by the laser which receives a sum of the first current, the second current, the third current and the auxiliary current, accords with a predetermined amount.

Accordingly, independent claims 1, 6, 15, 19 and 20 are patentably distinct from the cited art.

Further, it is noted that Ishida and the present application are commonly owned by Ricoh Company, Ltd, Tokyo, Japan. Therefore, under 35 U.S.C. § 103(c), Ishida does not preclude patentability of the invention claimed in this application.

Accordingly, applicant respectfully submits that independent claims 1, 6, 15, 19 and 20, and the claims depending therefrom, are patentable over the cited art.

In view of the remarks hereinabove, Applicant submits that the application is now in condition for allowance. Accordingly, Applicant earnestly solicits the allowance of the application.

If a petition for an extension of time is required to make this response timely, this paper

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should be considered to be such a petition. The Patent Office is hereby authorized to charge any fees that are required in connection with this amendment and to credit any overpayment to our Deposit Account No. 03-3125.

If a telephone interview could advance the prosecution of this application, the Examiner is respectfully requested to call the undersigned attorney.

Respectfully submitted,



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